

APPLICANT(S): KANTSCHUK, Amir et al.
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AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

1. (Currently Amended) In a communications system having a first modem pool for communicating with a second modem pool via a communications channel, each modem pool comprising a plurality of modems and having at least one NEXT cancellation filter, a method for modem wake-up comprising the steps of:

during a first time period:

- a) activating at least one of the modems in said first modem pool;
 - b) deactivating at least one of the modems in said second modem pool;
- for at least one target modem in said first modem pool:
- c) activating said first modem pool NEXT ~~canceller~~ cancellation filter;
 - d) measuring ~~the~~ a NEXT transfer function for said target modem and at least one other disturber modem in said first modem pool;

during a second time period:

- e) activating at least one of the modems in said second modem pool;
- f) deactivating at least one of the modems in said first modem pool;

for at least one target modem in said second modem pool:

- g) activating said second modem pool NEXT ~~canceller~~ cancellation filter;
- and

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h) measuring ~~the~~ a NEXT transfer function for said second modem pool target modem and at least one other disturber modem in said second modem pool.

2. (Original) A method according to claim 1 wherein said time periods are of an equal duration.

3. (Original) A method according to claim 1 wherein said time periods are of different durations.

4. (Currently Amended) A method according to claim 1 wherein either of said activating steps a) and e) comprises activating said at least one of the modems in said first or second modem pool, respectively, such that their transmitted signal occupies the entire usable bandwidth of said communications channel.

5. (Currently Amended) A method according to claim 4 wherein either of said activating steps a) and e) comprises activating said at least one of the modems in said first or second modem pool, respectively, at either of their maximum transmission rate and their maximum power.

6. (Original) A method according to claim 1 and further comprising the steps of:
establishing a system control channel between said modem pools;
communicating a predetermined wake-up time limit from one of said modem pools to the other of said modem pools via said control channel; and
setting each of said time periods to the length of said wake-up time limit.

7. (Original) A method according to claim 1 and further comprising the step of setting a predetermined wake-up time limit for both of said modem pools.

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8. (Original) A method according to claim 7 wherein said setting step comprises setting said time limits to an equal duration.

9. (Original) A method according to claim 7 wherein said setting step comprises setting said time limits to different durations.

10. (Currently Amended) A method according to claim 1 wherein said activating steps a) and e) comprise activating said at least one of the modems in said first and second modem pools, at their maximum transmission rate and maximum power.

11. (Original) A method according to claim 1 wherein said measuring steps comprise measuring said NEXT transfer functions in either of the time domain and the frequency domain.

12. (Currently Amended) A method according to claim 1 wherein said first modem pool is located at a central office and wherein said second modem pool is located at a remote terminal location.

13. (Currently Amended) A method according to claim 1 wherein said first modem pool is located at a remote terminal location and wherein said second modem pool is located at a central office.

14. (Currently Amended) In a communications system having a modem pool comprising a plurality of modems for communicating via a communications channel, said modem pool having at least one NEXT cancellation filter, a method for modem wake-up comprising the steps of:

- a) activating at least one of the modems in said modem pool;
- b) preventing communications via said communications channel;

for at least one target modem in said modem pool:

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- c) activating said modem pool NEXT ~~canceller~~ cancellation filter; and
- d) measuring the a NEXT transfer function for said target modem and at least one other disturber modem in said modem pool.

15. (Currently Amended) A method according to claim 14 wherein said activating step a) comprises activating said at least one of the modems such that their transmitted signal occupies the entire usable bandwidth of said communications channel.

16. (Currently Amended) A method according to claim 15 wherein said activating step a) comprises activating said at least one of the modems at either of their maximum transmission rate and their maximum power.

17. (Currently Amended) A method according to claim 14 wherein said measuring steps ~~comprise~~ step comprises measuring said NEXT transfer ~~functions~~ function in either of the time domain and the frequency domain.

18. (Currently Amended) A method according to claim 14 wherein said modem pool is located at either of a central office and a remote terminal location.

19. (Currently Amended) In a communications system having a first modem pool for communicating with a second modem pool via a communications channel, each modem pool comprising a plurality of modems and having at least one NEXT cancellation filter, a method for modem wake-up comprising the steps of:

during a first time period:

- a) deactivating at least one of the modems in said second modem pool;
for at least one target modem in said first modem pool:
- b) setting said target modem to receive-only mode;
- c) activating at least one other modem in said first modem pool;

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- d) activating said first modem pool NEXT ~~canceller~~ cancellation filter;
- e) measuring ~~the a~~ NEXT transfer function for said target modem and at least one other disturber modem in said first modem pool;

during a second time period:

- f) deactivating at least one of the modems in said first modem pool;

for at least one target modem in said second modem pool:

- g) setting said target modem to receive-only mode;
- h) activating at least one other modem in said second modem pool;
- i) activating said second modem pool NEXT ~~canceller~~ cancellation filter;

and

- j) measuring ~~the a~~ NEXT transfer function for said second modem pool target modem and at least one other disturber modem in said second modem pool.

20. (Currently Amended) A method according to claim 19 wherein either of said activating steps c) and h) comprises activating said at least one other ~~modems~~ modem in said first or second modem pool, respectively, such that their transmitted signal occupies the entire usable bandwidth of said communications channel.

21. (Currently Amended) A method according to claim 20 wherein either of said activating steps c) and h) comprises activating said at least one other ~~modems~~ modem in said first or second modem pool, respectively, at either of their maximum transmission rate and their maximum power.

22. (Original) A method according to claim 19 and further comprising the steps of:
establishing a system control channel between said modem pools;

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communicating a predetermined wake-up time limit from one of said modem pools to the other of said modem pools via said control channel; and

setting each of said time periods to the length of said wake-up time limit.

23. (Currently Amended) A method according to claim 19 wherein said activating steps c) and h) comprise activating said at least one other modems modem in said first and second modem pools at their maximum transmission rate and maximum power.

24. (Original) A method according to claim 19 wherein said measuring steps comprise measuring said NEXT transfer functions in either of the time domain and the frequency domain.

25. (Currently Amended) A method according to claim 19 wherein said first modem pool is located at a central office and wherein said second modem pool is located at a remote terminal location.

26. (Currently Amended) A method according to claim 19 wherein said first modem pool is located at a remote terminal location and wherein said second modem pool is located at a central office.

27. (Currently Amended) In a communications system having a modem pool comprising a plurality of modems for communicating via a communications channel, said modem pool having at least one NEXT cancellation filter, a method for modem wake-up comprising the steps of:

for at least one target modem in said modem pool:

- a) setting said target modem to receive-only mode;
- b) activating at least one other modem in said modem pool;
- c) preventing communications via said communications channel;

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- d) activating said modem pool NEXT ~~canceller~~ cancellation filter; and
- e) measuring ~~the a~~ NEXT transfer function for said target modem and at least one other disturber modem in said modem pool.

28. (Currently Amended) A method according to claim 27 wherein said activating step b) comprises activating said at least one other modem ~~modems~~ at their maximum transmission rate and maximum power.

29. (Currently Amended) A method according to claim 27 wherein said measuring ~~steps~~ comprise ~~step comprises~~ measuring said NEXT transfer ~~functions~~ function in either of the time domain and the frequency domain.

30. (Currently Amended) A method according to claim 27 wherein said modem pool is located at either of a central office and a remote terminal location.

31. (Cancelled)

32. (Currently Amended) A communications system configured for NEXT cancellation, comprising:

a communications channel;

a modem pool comprising a plurality of modems for communicating via said communications channel ~~A system according to claim 31~~ wherein said modems are operative to transmit a signal via said communications channel, wherein said signal occupies signals ~~occupy~~ the entire usable bandwidth of said communications channel; and

at least one NEXT cancellation filter operative to measure a NEXT transfer function for at least one target modem in said modem pool and at least one other disturber modem in said modem pool in the absence of communications to said modem pool via said communications channel.

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~~33~~ (Currently Amended) A communications system configured for NEXT cancellation comprising:

a communications channel;

a modem pool comprising a plurality of modems for communicating via said communications channel ~~A system according to claim 32~~ wherein said modems are operative at either of their maximum transmission rate and their maximum power; and

at least one NEXT cancellation filter operative to measure a NEXT transfer function for at least one target modem in said modem pool and at least one other disturber modem in said modem pool in the absence of communications to said modem pool via said communications channel.

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Cont [34. (Cancelled)

35. (Cancelled)

³³
~~36~~ (Currently Amended) A communications system configured for NEXT cancellation, comprising:

a communications channel;

a modem pool comprising a plurality of modems for communicating via said communications channel; and

at least one NEXT cancellation filter operative to measure ~~the~~ a NEXT transfer function for ~~for~~ at least one target modem in said modem pool, said target modem operating in a receive-only mode, and at least one other disturber modem in said modem pool in the absence of communications to said modem pool via said communications channel.

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³³
~~37~~ (Currently Amended) A system according to claim ~~36~~³³ wherein said modems are operative to transmit a signal via said communications channel, wherein said signal occupies ~~signals occupy~~ the entire usable bandwidth of said communications channel.

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~~38~~ (Original) A system according to claim ~~37~~³⁴ wherein said modems are operative at either of their maximum transmission rate and their maximum power.

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~~39~~ (Currently Amended) A system according to claim ~~38~~³³ wherein said NEXT cancellation filter is operative to measure said NEXT transfer ~~functions~~ function in either of the time domain and the frequency domain.

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~~40~~ (Currently Amended) A system according to claim ~~39~~³³ wherein said modem pool is located at either of a central office and a remote terminal location.